

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577

OUTSTANDING PO REPRINT

Purchase Order ID PO10810

Purchase Order Date 11/20/09

PO Print Date 12/03/09

Page Number 2 of 2

Order From :

VC-MAG002

MAGNA STAINLESS
5775 RUE KIERAN
ST LAURENT, QC H4S 0A3
CA

Contact Name

Vendor Phone 800 363 6646

Vendor Fax 514 339 1105

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr 10127-2607

Terms

Net 30

Currency

CAD

FOB

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty	Unit Price	Extended Price
5	M303R2.000	303 ROUND BAR 2"	11/30/09 Yes	✓ 12.00 Yours ppd f 12-8 9/12/2	\$28.7500	\$345.00

Special Inst: MATERIAL: 303 ROUND BAR
NOTE: 304/316 NOT ACCEPTABLE

Line Total: \$345.00

Outstanding PO Total: \$1,055.04

MATERIAL CERTIFICATION
REQ'D UPON DELIVERY

Change Nbr: 3

Change Date: 11/25/09

CS
No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable

Dart Aerospace Ltd.
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Hawkesbury, ON K6A 1K7
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Page Number 1 of 2

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VC-MAG002

MAGNA STAINLESS
5775 RUE KIERAN
ST LAURENT, QC H4S 0A3
CA

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	800 363 6646	Requisition Nbr	
Vendor Fax	514 339 1105	Tax Resale Nbr	10127-2607
Vendor Account Nbr		Terms	Net 30
		Currency	CAD
		FOB	

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty	Unit Price	Extended Price
----------	--	------------------------	----------------------	---------	------------	----------------

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	M303B1.000X2.000	303 BAR 1" X 2"	11/30/09 Yes	12.00 f	Yours ppd	\$41.2500	\$495.00

Special Inst: MATERIAL: AISI 303 STAINLESS BAR
NOTE: 304/316 NOT ACCEPTABLE

Line Total: \$495.00

4	M303B1.000X1.000	303 BAR 1" X 1"	11/30/09 Yes	12.00 f	Yours ppd	\$17.9200	\$215.04
---	------------------	-----------------	-----------------	------------	-----------	-----------	----------

Net 11.8/c 9/12/03

Special Inst: AS ABOVE

Line Total: \$215.04

11/25/09

Quality
Management
System
Approved
CERT.N®
SGI 6000360

ACEROS INOXIDABLES

OLARRA



69532

CANADIAN SPECIALTY METALS
81 STEINWAY BLVD.
ETOBICOKE- ONTARIO M9W 6H6 - CAN

Trade Mark - Zeichen des Lieferwerkes
Anagrama del suministrador



Works Inspector Stamp - Werkssachverständiger
Sello del Inspector



Certificate type - APZ Nach Certificado tipo		EN 10.204/3.1		Certificate n° - Prüf-Nr Certificado n°		630.235		Date-Datum-Fecha 9 DE ENERO 2009	
Our order N° Werks - Nr N° de Referencia		398.933		Heat Schmelze Cotada		969444		Your order N° Bestell - Nr Pedido N°	
Steel Grade Werkstoff Calidad		AISI-303 /		According to Entsprechend Corresponde		ASTM A 582/A582M-05			
Shape and Size Gegenstand Perfity dimension		SQUARE 1"		Tolerance - Toleranz Tolerancia		ASTM-A484-06 B		Bundles Bunde Bultos	
						1		Bars Stäbe Barras	
								70	
								Weight Gewicht Peso	
								2.791LBS	
Requirements - Anforderungen - Exigencias									
SAE AMS 5640U-07.TYPE 1 QQ-S-7648-70 Amd.2 COND.A EN 10.088-3.2005									
Melting process / Erschmelzungsart / Proceso de Fusión E.A.F. / A.O.D.									
Heat treatment / Wärmebehandlung / Tratamiento térmico 1.050 , 4 HORAS Water / Wasser / Agua									
Solution annealed/Abgeschreckt/Hipertempe >> Cold drawned/Gezogen/Estirado									
Test results - Ergebnis der Prüfungen - Resultados de los ensayos									
Dimension of Specimen Abmessungen des Probestabes Medida de las probetas		Rp 0.2% N/mm2 MPA		Rp 1% N/mm2 MPA		RM N/mm2 MPA		A %L 5D	
		A %L 4D		Z %		Hardness Härte Dureza HBW		Impact Test / Kerbschlag / Resiliencia ISO V Jules	
Min.									
Max.		KSI		KSI					
Temperature°C 20C		Spec. N° Probe Nr. Pro N°		1		55.691		92.239	
						49		57	
						197			
C		Si		Mn		P		S	
Cr		Mo		Ni		Ti		Cu	
Co		N							
Min.									
Max.									
0,042		0,32		1,66		0,032		0,305	
17,60		0,32		8,50				0,46	
0,170		0,0330							
Visual and dimensional inspection Besichtigung und Ausmessung Control visual y dimensional		O.K.		Radioactivity inspection Radioaktivitätskontrolle Control de Radioactividad		O.K.		Antimbinig test Spektroskopische Verwechslungspr Antimezcla	
								Grain Size Korngröße Tamaño de grano	
Remarks - Bemerkungen - Observaciones									
MECAMAX-PLUS Free from mercury contamination No Weld Repair. 1.4305.									
EDV / EDP Acc. EN 10.204 Alfredo Molina Certification Mng. Works Inspector Der Werksachverständige Inspector de fábrica									



110



Magna Stainless

5775 Kieran St, Saint-Laurent, Quebec H4S 0A3
Phone: (514) 339-1211 Watts: 1-800-363-6646 Fax: (514) 339-1105



PACKING LIST

Page 1 of 1

I020368

SOLD TO:
DART AEROSPACE LTD
1270 ABERDEEN STREET

SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN STREET

HAWKESBURY , ON
K6A 1K7
Contact: CHANTAL

HAWKESBURY , ON
K6A 1K7
Ship Terms: PREPAID



ASA#

SPECIAL INSTRUCTIONS

Currency		Sales Person	Customer Phone	Customer Fax	Customer PO		
CANADIAN DOLLARS		ERYCK BLAIS	(613) 632-5200	(613) 632-1053	P0010810		
Sales Order	Terms		Ship Via		Date Ordered	Date Required	Date Shipped
W021807	NET 30 DAYS		NIR:R-557065-1		11/20/09	12/03/09	12/03/09

Ordered	Back Ordered	Unit	Description	Bundle #	Heat #	Shipped
1		PC	STAINLESS ROUNDS SRB 303 2" x R/L 12'8" 136 LB / 1 PC	L034043	422074	1
1		PC	STAINLESS SQUARES SSQ 303 CD 1" x R/L 11'8" 40 LB / 1 PC	L034044	969444	1
Bundles: 1				Approx Weight:		176 LB

Received by: _____ Date: _____ Signature: _____

Page 1 of 1

All amounts are calculated in domestic currency.

Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID/Vendor Name		VC-MAG002	Magna Stainless								
PO10810	4		M303B1.000X1.000 f		11/30/2009	12/4/2009	11.8000	\$17.92	0.0000	0	\$211.46
CAD	No		303 BAR 1" X 1" f		12.0000	Stores		\$211.46	0.0000	0	
			113341								
	5		M303R2.000 f		11/30/2009	12/4/2009	12.8000	\$28.75	0.0000	0	\$368.00
	No		303 ROUND BAR 2" Each		12.0000	Stores		\$368.00	0.0000	0	
			113341								
									Total Received Quantity:		24.6000
									Total Qty to Inspect (PO U/M):		0.0000
									Total Reject Quantity:		0.0000
									Total Receipt Value:		\$579.46
									Total Balance Due Quantity:		0.2000

Receiving Report

Date: 9/12/3
 Supplier: MALINA

Batch No: M113341
 Dart P/O: 10810

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☐

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☐ No ☒ N/A ☐
 Shipment Complete: Yes ☒ No ☐ N/A ☐
 QC6 Inspection ☒ N/A ☐
 Work Order ester 108 N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments
M303	Blow YA-000	10	0	0	10	

Initials of receiver (if shipment OK) CU Level 12 CU

Production/Admin: 9/12/4
 Date CU
 Received/Costing CU
 Initial CU

Location _____

DART AEROSPACE LTD		Work Order: 62730
Description: Sill Fitting		Part Number: D4111-1
Inspection Dwg: D4111	Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

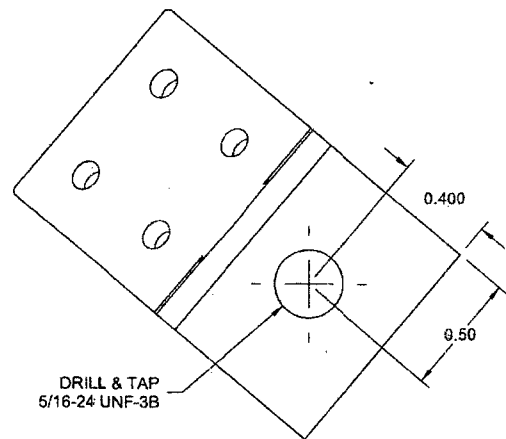
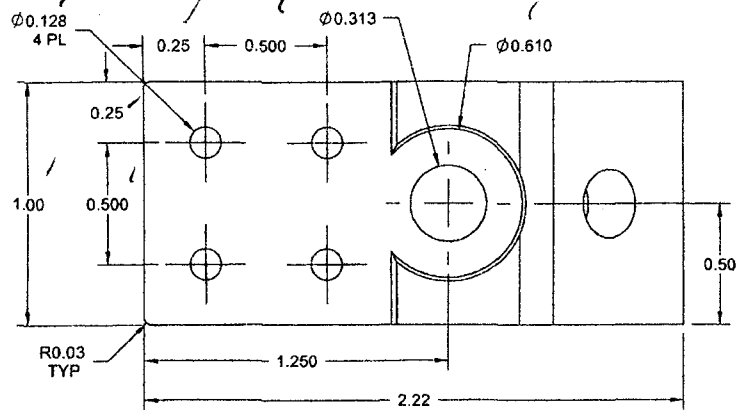
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.00	+ .030	.985	✓		Ver. J1-3	
.500	+ .010	.500	✓		"	
.25	+ .030	.244	✓		"	
Ø.128	+ .005 - .001	.128	✓		"	
.25	+ .030	.250	✓		"	
.500	+ .010	.500	✓		"	
Ø.313	+ .006 - .001	.314	✓		"	
.610	+ .010	.610	✓		"	
.50	+ .030	.494	✓		"	
2.22	+ .030	2.730	✓		"	
1.250	+ .010	1.760	✓		"	
.03	+ .030	.030	✓		P-G	
.100	+ .010	.095	✓		Ver. J1-3	
1.540	+ .010	1.539	✓		"	
.300	+ .010	.303	✓		"	
.800	+ .030	.801	✓		"	
.74	+ .030	.742	✓		"	
40°	+ .5°	40°	✓		Protractor	
.18	+ .030	.188	✓		Ver. J1-3	
.125	+ .010	.125	✓		"	
.35	+ .030	.325	✓		"	
2.26	+ .030	2.286	✓		"	
.400	+ .010	.400	✓		"	
.50	+ .030	.494	✓		"	

Measured by: JL
Date: 10/10/14

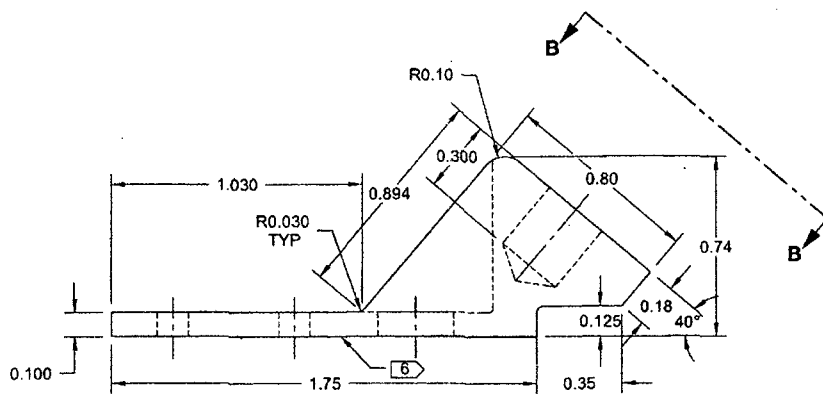
Audited by: [Signature]
Date: 10.10.15

Prototype Approval:	N/A
Date:	N/A

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	



VIEW B-B



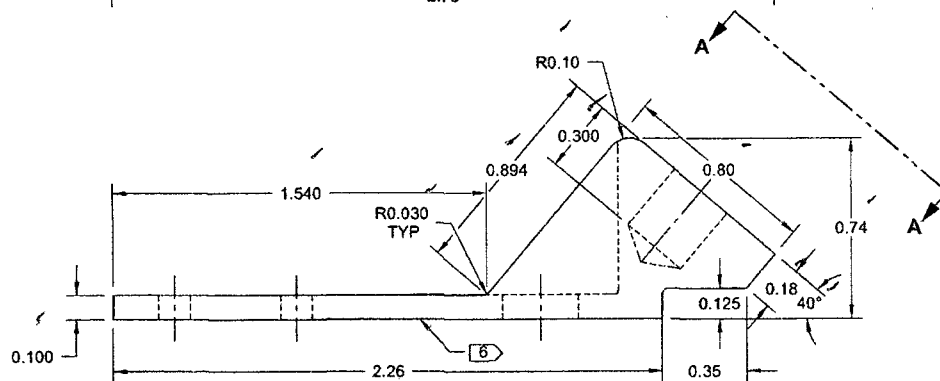
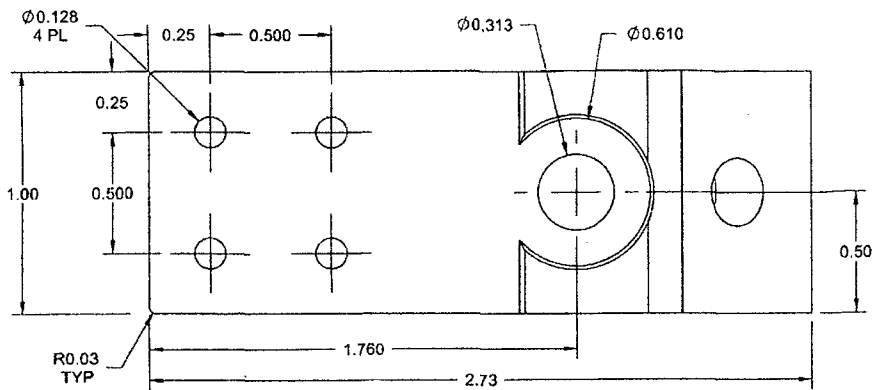
D4111-3 SILL FITTING

w/p 62730

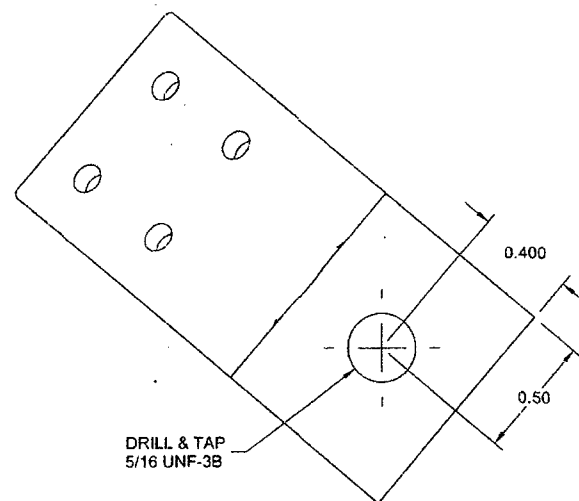
RELEASED
2010-09-23

- NOTES:
- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR, PER ASTM A276 OR ASTM A582 PER DART SPEC M303B OR M304B
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENT P/N D4111-3 & B/N PER QSI 044 6.1
 - 7) WEIGHT: 0.13 lbs

DESIGN	JPH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	JPH		
CHECKED	JPH	DRAWING NO. D4111	REV. A
MFG. APPR.		TITLE	SHEET 3 OF 3
APPROVED		SILL FITTING	SCALE
DE APPR.			NTS
DATE	10.07.20	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE REPRODUCED FOR ANY PURPOSES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D4111-1 SILL FITTING



VIEW A-A

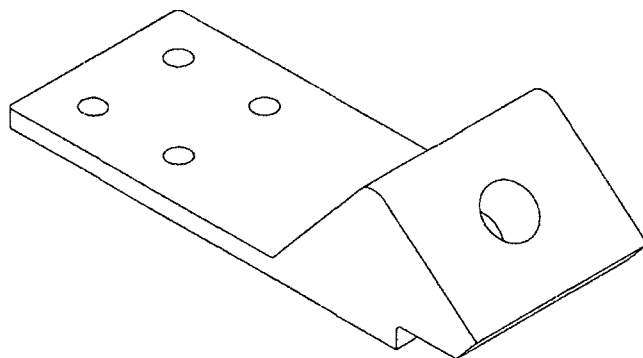
NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR, PER ASTM A276 OR ASTM A582 PER DART SPEC M303B OR M304B
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENT P/N D4111-1 & B/N PER QSI 044 6.1
- 7) WEIGHT: 0.14 lbs

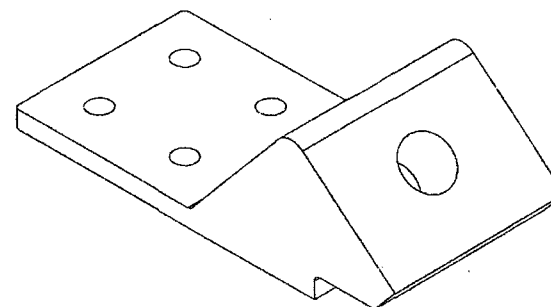
w/o 62730

RELEASED
2010-09-23

DESIGN	JPH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	JPH		
CHECKED	B	DRAWING NO. D4111	REV. A
MFG. APPR.		SHEET 2 OF 3	
APPROVED		TITLE	SCALE
DE APPR.		SILL FITTING	NTS
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
D4111-1 SILL FITTING



D4111-3 SILL FITTING

RELEASED
2010-09-23
JPH

w/o 62730

A		NEW ISSUE		JPH	10.07.20	
REV.		DESCRIPTION			BY	DATE
DESIGN	JPH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA				
DRAWN	JPH					
CHECKED		DRAWING NO.	REV. A			
MFG. APPR.		D4111	SHEET 1 OF 3			
APPROVED		TITLE	SCALE			
DE APPR.		SILL FITTING	NTS			
DATE	10.07.20	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.				

Eric Charbonneau

From: Bill Beckett [bbeckett@dartaero.com]
Sent: September 29, 2010 3:56 PM
To: 'Eric Charbonneau'; 'Chris Provencal'; 'Mike Petsche'; 'David Shepherd'
Cc: 'Linda Lacelle'
Subject: RE: 350 skid swaging

All - We currently ship 100-120 350 skidtubes per year vs. ~150 Bell Med skidtubes per year. Clearly we want to proceed with the Bell Med first because of the potential savings and the fact that it will be "simple" from an Eng'g and Mfg pov to make the change.

I believe it is worth it to make a change for the 350 as well, but it will be more complex. It would be nice, for example, if we could standardize crossbolt spacer sizes.

Eric - I would like to see a recommended approach (please work with Eng'g), how much it would cost and what we would save annually through your recommended approach.

Bill

From: Eric Charbonneau [mailto:echarbonneau@dartaero.com]
Sent: September 24, 2010 12:41 PM
To: Beckett, Bill; Chris Provencal; Mike Petsche; David Shepherd
Cc: Linda Lacelle
Subject: 350 skid swaging

Did some testing for swaging spacers on 350 skid... results are good, the fact that there is no ridge on the extrusion does not affect the swaging process. The other problem now... that Dan Paquette pointed out that there is no c'bore on the 350 skids and the swaging process creates a c'bore... not sure what engineering thinks of that. I did some research and we could try to use 5/8" x .083" wall 304 Stainless Steel mat'l for the X-bolt spacers instead of 5/8" x 0.065" wall aluminum (that size tubing is only available in SS) for the D2743 spacers expand them to .484" (as per dwg D2750), there is a tool available for that diameter and I can order it in the long version which would enable us to swage up to 2.250" deep per side therefore overlapping the c'bore effect and hopefully end up with a perfect 0.480" diameter straight thru... just thinking outside box here might not make much sense. For D3490-1 spacer we could expend them as per dwg using .065" instead of 0.049" but no long version tool available so we can't eliminate the c'bore effect. For D3490-3 spacers we would need to go to a SS version in order to achieve proper inner diameter and for D3490-5 forget about it there is no tool available for any 5/16" OD tubing.... I know it's complicated, basically what I'm trying to say is that for the 350 skid there would be a lot of engineering changes required in order to swage the x-bolt spacers.

ERIC CHARBONNEAU
Production Engineering Coordinator

DART
aerospace

T(613) 632-5200
F(613) 632-1053
echarbonneau@dartaero.com



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Picklist Print

Page 1

October 6, 2010 2:02:38 PM

Work Order ID: 62730



Parent Item: D4111-1



Parent Item Name: Sill Fitting

Start Date: 12/10/2010

Required Date: 15/10/2010

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP REV:A NEW ISSUE 10-09-24 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M303B1.000X1.000 Purchased

No

100

f

13.3889

0.24

0.757895



JK 10/10/12

303 BAR 1" X 1"

Location

Loc Qty

Loc Code

MAT

12

115555

12

MAT53

1.38892

113341

0.15996

113719

1.22896

.76

Work Order ID 62730

Page 3

October 6, 2010 2:02:39 PM

Item ID: D4111-1

Accept



Setup Start



Revision ID:

Stop



Item Name: Sill Fitting

Start Date: 12/10/2010 Start Qty: 3.00



Cust Item ID:

Required Date: 15/10/2010 Req'd Qty: 3.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10.10.15

10-10-15
(3)

Work Order ID 62730

October 6, 2010 2:02:39 PM



Page 2

Item ID: D4111-1

Accept



Setup Start



Revision ID:

Stop



Item Name: Sill Fitting

Start Date: 12/10/2010 Start Qty: 3.00



Cust Item ID:

Required Date: 15/10/2010 Req'd Qty: 3.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

DL 16/16/14



QC

Memo

0.00

Quality Control

130

QC8- Inspect parts - second check

0.00

Jan 10.10.15



QC

Memo

0.00

(3) /

Quality Control

140

Identify as per dwg & Stock Location: 128

0.00

D.D.



Packaging

Memo

0.00

Ex 14/15 (3)

Packaging

Work Order ID 62730

October 6, 2010 2:02:39 PM



Page 1

Item ID: D4111-1

Accept



Setup Start



Revision ID:

Stop



Item Name: Sill Fitting

Start Date: 12/10/2010 Start Qty: 3.00



Cust Item ID:

Required Date: 15/10/2010 Req'd Qty: 3.00

Customer:

Reference:

10-10-06

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4111

A

100

0.00



Bandsaw

Jeaspa Bandsaw

Memo

CUT BLANK TO 2.855" LONG

0.00

SL 10/10/12

110

0.00



HAAS 1

HAAS CNC vertical machine #1

Memo

MILL AS PER DWG AND FOLIO FA965

DWG REV: *4*

FOLIO REV: *44*

0.00

SL 10/10/14

2-DEBURR